

**DECLARATION**

I, Hélène Strandin, of Bergenstråhle & Lindvall AB,
P O Box 17704, S-118 93 STOCKHOLM, Sweden hereby certify that I am
the translator of the specification, claims and abstract of patent application No.
SE 0002761-5 as originally filed in Sweden on 25 July 2000, and I also certify
that the following is a true translation to the best of my knowledge and belief.

Declared at Stockholm, 19 February 2007

A handwritten signature in black ink, appearing to read "Hélène Strandin".

Hélène Strandin



5

NASAL RINSER AND OUTLET PORTION THEREFOR

The present invention relates to a nasal rinser and an outlet portion for a nasal rinser.

10

Rinsing of the nose alleviate and reduce troubles with allergies, infections and troubles after nose surgery since the rinsing flushes away allergens (allergy-forming substance), microbes (virus, bacteria), bi-products of the body (pus, mucus) and dust and soot particles. The inflammatory swelling will be reduced and after nose surgery scabs will be loosened up, whereby the healing process will be accelerated. Rinsing of the nose with salt water is a well tried method and has been recommended by doctors for at least a hundred years.

20

The known nasal rinsers on the market are a potter container for multiple use, which is expensive, ungain and has a potter outlet, and two disposable variants which are prefilled with salt water and water from the Atlantic, respectively, which of course become very expensive to use on regular basis and whose outlet do not function satisfactory and therefore neither their ability to fill up the nose and the fact that they can only be used with the salt water that is prefilled in the nasal rinser.

25

A first object of the present invention is to provide an outlet portion for a nasal rinser that quickly, comfortably and in a well functioning way may fill the nasal cavity with liquid.

30

A second object of the present invention is to provide an inexpensive, simple and well functioning nasal rinser for multiple use.

40

The first object is met by means of an outlet portion for a nasal rinser, which is characterised in that it comprises an outlet end, a connection end and nozzle-shaped channel

5 between these ends which shows a constriction and an expanded outlet. The outlet portion has the advantage that the liquid which is pressed in through the channel will leave the channel under turbulent flow, whereby the liquid quickly fills out the nasal cavity at the same time as a thin jet is avoided that sprays directly on the mucous membrane of the nasal cavity, which feels unpleasant.

10 The outlet portion preferably shows a circumference increased portion, for example a droplet or balloon shaped portion, at the outlet end so that the outlet portion seals 15 against the edges of the nostril irrespective of the size of the nostril, which has the advantage that the liquid will not leak out the wrong way and that the shape of the outlet portion will help in opening up the nostril arch, which is 20 the most narrow portion of the nostril.

25 Preferably, the outlet portion is made of a flexible material which is experienced as soft and comfortable against the nose, such as silicone rubber.

30 The shape of the channel at the connection end of the outlet portion is preferably adapted to the connection means of the nasal rinser, for example conical with the largest diameter at the end so that the outlet portion fits to a syringe having a conical tip.

35 The second object is met by means of a nasal rinser which is characterised in that it comprises an outlet portion of the present invention and a syringe or a compressible balloon for rinsing liquid, whereby the outlet portion is provided at the tip of the syringe or the outlet opening of the balloon, which is provided with connection means. A nasal rinser according to any one of the two variants is simple and inexpensive to manufacture and easy to use, especially the 40 syringe variant where it is easy to suck in the rinsing liquid into the syringe before the nasal rinsing, and easy to keep clean, especially the syringe variant.

5

Of course, the outlet portion may be connected to any other type of nasal rinser means.

10

The rinsing liquid may for example be salt water, an oil emulsion or salt water provided with a medicine.

15

The present invention will now be described by exemplifying embodiments of the present invention together with appended drawings, in which:

20

Fig. 1 illustrates an embodiment of an outlet portion according to the present invention of a nasal rinser.

25

Fig. 2 illustrates a first embodiment of a nasal rinser of syringe type according to the present invention.

30

Fig. 3 illustrates a second embodiment of a nasal rinser of balloon type according to the present invention.

35

In Fig. 1 a outlet portion 1 is shown, which comprises an outlet end 2 and a connection end 3. Between these ends 2, 3 a channel 4 is arranged. The channel 4 is nozzle shaped and shows a restriction 5 in the cross section and an expanded outlet 6. At the connection end 3 the channel 4 has a shape which is adapted to the type of connection of the nasal rinser at which the outlet portion shall be arranged. In the shown case the channel 4 is conically shaped with the largest diameter in the connection end to fit to a syringe with a conically tapering tip, for example a monoject syringe.

40

The outlet portion 1 has an outer shape that reminds of a lolly where the connection end 3 is the stick and the outlet end 2 is the lolly head. The outlet end 2 shows a circumference enlargement portion 12 which preferably is balloon or droplet shaped, whereby the outer diameter of the outlet portion increases from the outlet end 2 a distance

5 inwards from this whereafter the outer diameter decreases.
This results in the fact that the outlet portion 1 may be
put into the nostril a short distance at the same time as
the increasing diameter results in that the opening of the
10 nostril fully is filled up by the outlet portion 1 so that
it seals between the outlet portion 1 and the nostril. This
design also results in that the outlet portion 1 suits all
different sizes of nostrils.

15 Preferably the outlet portion 1 is made of a silicone
rubber.

20 When rinsing liquid is pressed into the outlet portion 1
from for example a syringe into the channel 4 the pressure
will increase when the liquid passes the restriction 5 and
will thereafter increase in velocity when the liquid reaches
in the expanded outlet, whereby the flow will become
turbulent.

25 In Fig. 2 a nasal rinser 7 according to a first
embodiment of the present invention is shown. It comprises
an outlet portion 1 provided at the tip 8 of a syringe 9, in
the shown case a monoject syringe with a conically shaped
tip 8.

30 In Fig. 3 a nasal rinser according to a second
embodiment of the present invention is shown. It comprises
an outlet portion 1 provided at a hollow tip 10 at a balloon
shaped body 11. The balloon shaped body 11, is compressible
35 to be able to press out liquid comprised within the balloon
shaped body 11 through the hollow tip 10 and out through the
outlet portion.

40 At use lukewarm rinsing liquid is drawn into the syringe
9 or the balloon 11 through negative pressure, whereby it is
pressed out through the outlet portion 1 and further into
the nose.

5 CLAIMS

- 10 1. An outlet portion (1) for a nasal rinser which is characterised in that it comprises an outlet end (2), a connection end (3) and a nozzle shaped channel (4) between these ends that shows a restriction section (5) and an expanded outlet section (6).
- 15 2. An outlet portion according to claim 1, which shows an enlarged circumference portion (12) at the outlet end (2) for sealing at use between the outlet portion (1) and the user's nostril.
- 20 3. An outlet portion according to claim 2, wherein the enlarged circumference portion (12) is droplet or balloon shaped.
- 25 4. An outlet portion according to claim 1, 2 or 3, wherein the channel (4) is conically shaped at the connection end (3) and has a largest diameter at the connection end (3).
- 30 5. An outlet portion according to anyone of the previous claims, which is made of a flexible material.
- 35 6. A nasal rinser, characterised in that it comprises an outlet portion (1) according to anyone of the claims 1-5 and a receptacle for rinsing liquid connected to the outlet portion (1), whereby the receptacle is manouverable for emptying the rinsing liquid out through the outlet portion (1).
- 40 7. A nasal rinser according to claim 6, wherein the receptacle is provided with a piston for emptying of the rinsing liquid out through the outlet portion (1).
8. A nasal rinser according to claim 6, wherein the receptacle is a flexible, balloon shaped body, which is

5 compressible for emptying of the rinsing liquid out through
the outlet portion (1).

5 **ABSTRACT**

10 An outlet portion (1) for nasal rinsers which is characterised in that it comprises an outlet end (2), a connection end (3) and a nozzle shaped channel (4), showing a restriction (5) and an expanded outlet (6), in between.